



# SMC24 Analog System Controller

## Key Features:

- ▶ **Two Channel Analog Controller**
  - Configured for DMS-1 Studio Reference Monitors
- ▶ **Complete Signal Processing**
  - Crossover Filters
  - Phase Compensation
  - CD Horn Equalization
  - Mid-Filter Type Limiters with Switch Selectable Threshold
- ▶ **Convenient Controls**
  - Level trim controls and channel mutes located on the front panel for quick adjustment.



The SMC24 provides two analog channels of two-way signal processing for DMS-1 Series reference monitors. To assure optimum acoustic performance, careful consideration was given to the overall circuit topology. The SMC24 achieves a very low noise floor, smooth amplitude response, and maximum safe dynamic range. Use of low-noise components in the active signal path guarantees quiet performance for any application. 24dB per octave Linkwitz-Riley type crossover filters with phase compensation, equalization and limiting for each output combine to provide outstanding sonic quality.

The SMC24 utilizes mid-filter type limiting circuitry. The limiting occurs between two lesser-sloped crossovers stages to reduce band spreading and to produce a smoother response around the crossover point during limiting. To reduce noise, the limiter is placed in a side-chain to the audio signal, removing it from the direct audio circuit during lower operational levels.

## Specifications:

Speaker System Compatibility:	DMS-1 Left, Right and Horizontal Versions
Configuration:	2 channels by 2-way outputs
INPUTS & OUTPUTS:	
Inputs:	2 channels, Max level +20dBu, 10K $\Omega$ impedance, Pin 2+
Outputs:	4 bands, Max level +20dBu into 600 $\Omega$ impedance, Pin 2+
Output Impedance:	47 $\Omega$
CONTROLS & INDICATORS:	
Front Panel Controls:	$\pm$ 6dB trim control on front panel Mute for each output band
Rear Panel Controls:	Limiter threshold for each output band, 1dB steps, via rotary switches AC voltage selectable
Displays:	Band-type, mute, signal present, limiter function
PERFORMANCE:	
Dynamic Range:	>110dB
Total Harmonic Distortion:	<0.005% typical, 0.1% maximum
Output Channel Mute:	Each output, auto on (4 sec) power up and down
Nominal Gain:	0dB (Unity Gain)
Crossover:	24dB/oct Linkwitz-Riley, 1kHz
Limiters:	User-adjustable threshold in 1dB steps via switches on back panel (from -10dB to +5dBu). Mid-filter type Limiter ratio >20:1
Frequency Response:	20 Hz to 20 kHz
PHYSICAL:	
Power Requirements:	Selectable 120V or 240V, +10%/-20% 50/60 Hz
Dimensions (H x W x D):	44.5 x 483 x 292 mm (1.75 x 19 x 11.5 in)
Weight:	4 kg (8.8 lb)

## ▶ SMC24 / Analog System Controller

### Applications and Controls

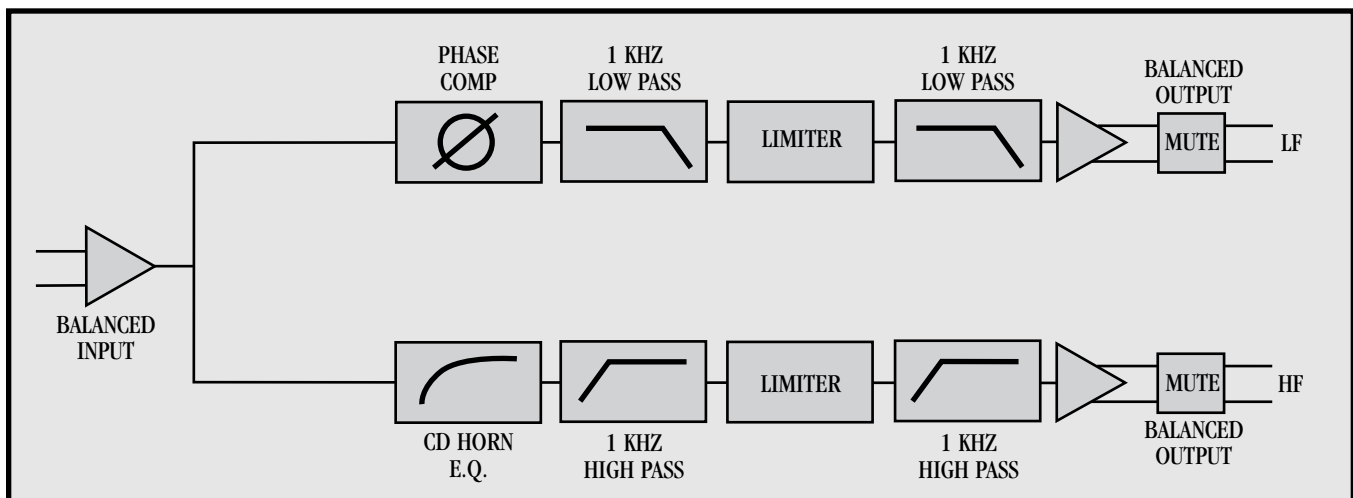
The SMC24 has been designed as an analog active controller for DMS-1 Reference Studio Monitors. The controller provides crossover, signal alignment, equalization and limiting functions.

Set-up is as simple as connecting an active crossover. All critical tunings are preset. The user can “trim” the gains and limiters in accordance with amplifier sensitivities, gain factors and the desired limiter safety factor. No “sensing” connections are required. Limiters thresholds are switched on the rear panel in 1dB increments, providing precision and repeatability.

### Architects and Engineers Specifications:

The control electronic unit shall be a two-channel device for bi-amplification operation. It shall be capable of: electronic crossover, phase alignment, protection limiting for high and low frequency transducers, and high frequency power response equalization. Limiting shall be implemented via “mid-filter” topology, whereby the limiting action occurs between two lower-slope crossover stages, to reduce band-spreading during limiting. To reduce noise, the limiter shall be placed in a side-chain

to the audio signal, removing it from the direct audio circuit during lower operational levels. Limiter threshold shall be adjustable via switch increments of 1dB per step for precision and repeatability. Front panel indicators shall include band type, mute, signal present, and limiter active for each output channel. Front panel controls shall include  $\pm 6$ dB of gain adjustment for each output band. Back panel controls shall include limiter threshold for each output band, and AC voltage selection. Crossover frequency shall be fixed at 1 kHz with a slope rate of 24dB per octave. Hum and noise shall be 110dB or better below the maximum output level. Maximum output level shall be +20dBu or greater. Total harmonic distortion shall be less than 0.1% at any output level. Inputs and output shall be electronically balanced. Size shall be 1.75" high by 19" wide by 11.5" deep. The controller shall be JBL SMC24 or equivalent.



Block Diagram (x2)



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